Killer Hardware Tips

Too Cool To Follow Rules

If you're a user who can't leave things alone if there's a chance you can make them better, even if it means bucking the norm, read on. We have some tips and tricks that just might make you more productive.

Old Hardware Lives On

Computer magazines (*CPU*, too) devote countless pages to extol the latest and greatest hardware. Perusing these pages without feeling your month-old 2GHz screamer is already obsolete is hard. Whether your hardware is a week or decade old, take heart. With some care, you can extend your PC's lifespan for a long, long time.

It doesn't take a rocket-like PC to surf the Web, do word processing, and perform other pedestrian computing tasks. Even an old Pentium 75 can do those jobs nicely—with a bit of patience and preparation.

The right software is the most important asset for extending the life of older hardware. When you're using a slow machine with limited RAM and drive space, there's no room for bloated software. Forget about WinXP and Microsoft Office. Think thin.

Miles Wolbe, a computer consultant in Kula, Maui, Hawaii, runs TinyApps.org (www.tinyapps.org), a Web site that distributes sleek, efficient Windows apps. The site defines "tiny" as any app that fits on a floppy and doesn't require installation—a breed of programs many users have written off as extinct. The site lists more than 100 programs averaging 226KB in size, most of which are free. You won't be stuck with abandonware from 1992, either. Almost all of the applications at TinyApps.org are regularly updated.

Wolbe's favorites include QNX Demo (www.qnx.com/iat)—which includes a Web browser, Web server, POSIX-certified real-time OS, TCP/IP stack, and a windowing system—and Off By One Web Browser (www.offbyone.com), a small, self-contained Web browser with full HTML 3.2 support.

"Both of these represent quite a paradigm shift for users accustomed to 1GB-plus operating systems and 25MB-plus browsers," Wolbe says. "Instead of continuing to throw hardware at the problem, these programmers have decided to do something radical: write good, clean code."

The Sound Blaster Audigy: audio gadget of the future or rehashed technology? The truth is out there—somewhere.

These sleek applications are instrumental in stretching the lifespan of PC hardware, Wolbe says. "I just salvaged a 166MHz desktop computer, loaded it with Windows 95 and some tiny apps. It boots in about 20 seconds and handles Internet and word-processing tasks beautifully. Perhaps even more incredibly, the whole system was completely free at a computer recycling day."

Putting to use the old (but still functional) dirt-cheap computers you find at garage sales, thrift stores, and in classified ads may be the biggest benefit of tiny apps. If you salvage an old PC and monitor from a trash heap, many Web sites (try www.computergeeks.com and www.computersurplusoutlet.com) offer inexpensive accessories, such as 30-pin SIMMs, network cards, and cheap hard drives, to spruce them up.

You don't even have to pay for an OS. Visit Linuxiso.org (www.linuxiso.org) for a selection of Linux installation ISO images ready to burn to a CD-R. You can also download FreeDOS, which includes a graphical windowing system, at www.freedos.org.

You could also turn that PC into a router and firewall for your LAN by installing a couple of Ethernet cards and downloading the Linux Router Project (www.linuxrouter.org), which is a micro distribution of Linux that is dedicated to networking.

Also, be sure to visit Low End PC (www.lowendpc.com), a Web site offering articles and tips on using older PCs. A sister site, Low End Mac (www.lowendmac.com), is dedicated to keeping Macs out of the graveyard.

The Truth Is Out There

An alien autopsy took place at Area 51. Elvis is alive. The Mafia killed JFK. The moon landings were staged. Here's a new one to add to your list of conspiracy theories: Creative Labs' Sound Blaster Audigy sound card is just a repackaged Sound Blaster Live! with new drivers.

At least that's what a group of Taiwanese hackers were alleging. The group claimed that by modifying the drivers, any Sound Blaster Live! card can take on the full functionality of the Audigy,

with the exception of the Audigy's IEEE 1394 (FireWire) port. The Sound Blaster Audigy offers 24-bit, 96KHz sound, bringing PC acoustics into the realm of high-end consumer electronics audio.

In the spirit of all good conspiracy theories, one vital piece of evidence is difficult to obtain. Performing the hack requires the SB Live! 2 SB Audigy driver, but the sites that allegedly house that crucial file are flaky at best and gone forever at worst. Users who have managed to acquire the drivers claim the hack does work, although some have reported a few technical glitches.

"I posted the story back in August 2001 [since taken down], and at that time the first people to bring this to the attention of the public was AudigyBoom. They leaked the original SB Live! 2 SB Audigy Driver," says Bob Kahlon, an editor at Warp2Search.net (www.warp2search.net) who goes by the handle "NewsFactory." AudigyBoom is known as the kX Project (www.kxdev.com).

Does Kahlon think the Audigy is really the Sound Blaster Live! repackaged? "I would say it's possible. The only people that really know are Creative and maybe the kX Project," says Kahlon. There is precedent. Last year, digit-life.com (www.digit-life.com) released software that would make a four-channel Sound Blaster Live! card support 5.1-channel audio.

Also in the spirit of good conspiracies, The Man completely denies the allegations.

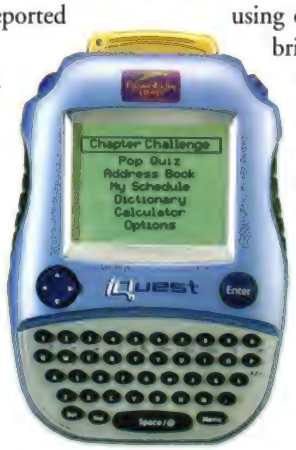
"That is not even close to true in any respect," says Phil O'Shaughnessy, public relations manager for Creative. "The Audigy is an entirely redesigned audio architecture. It has four times the processing power of the EMU10K1 products," the processor in the Sound Blaster Live! "The Audigy processor has EAX advanced functions, such as environmental morphing and environmental panning, that are not possible with the Sound Blaster Live! The Audigy achieves 24-bit, 96KHz, 100dB signal-to-noise ratio that cannot be achieved with the Sound Blaster Live!"

We don't know if an alien cadaver is hidden somewhere in the Nevada desert or if the Audigy hack is for real. We do know that the truth is out there—somewhere.

Toys You Can Interface

Toys are fun. Toys that your computer can control are even better.

Lego Mindstorms (mindstorms.lego.com) is perhaps the quintessential computer-connectable toy. You can build robots using old-fashioned Lego building bricks, then program and control them with your PC. Data is sent wirelessly from an infrared transmitter to a special programmable Lego block. A massive online community has been built around Mindstorms, but it's only the tip of the PC toy iceberg.



Download this week's math chapter into LeapFrog's iQuest handheld. Just don't use it during the test, kids.

The Boe Bot Robot Kit (www.parallaxinc.com) is a more "serious" toy that should satisfy students learning about robotics. You can build a rolling robot ($185), which includes infrared object detection and photo-resisters, in about two hours. In addition, you can program the Boe Bot to follow a line, solve a maze, pursue a light source, or communicate with another robot. More advanced roboteers will appreciate the $219 GrowBot, which takes about five hours to assemble and is more expandable.

Toys that talk to the PC aren't limited to robots. LeapFrog (www.leapfrog.com) offers a line of kid toys that can download data via a computer. Turbo Twist Spelling teaches spelling skills to kids in grades 1 to 8. You can download grade-appropriate spelling words to the toy from LeapFrog's Web site or create and download your own spelling lists.

Aimed at middle-school students, LeapFrog's iQuest handheld is a kid-friendly PDA with scheduler, address book, dictionary, and calculator functions. LeapFrog has partnered with textbook publishers to offer downloadable curriculum, including students importing chapter outlines and interactive quizzes for their math, science, and social studies classes.

If programmable toys don't interest you, consider hacking a toy not meant for programming. Hacking Furbys (www.afu.com/fur.html) to speak fluent French or do the Macarena is yesterday's news, but how about modding your Sony AIBO? AiboPet's Reborn Site, (aibohack.com) offers programs that will change the personality of the AIBO. You can make it disco, behave like Cartman, speak German, or even act like a kitty.

Other hackers have reprogrammed the Cybiko (check out www.devrs.com/cybiko), another handheld computer for kids, and those obnoxious Boogie Bass and Big Mouth Billy Bass singing fish (www.ai.mit.edu/~vona/bass/bass.html). CPU

by Kevin Savetz

Infinite Loop

Tons 'o Data

Here's why data storage is such a growth business: Humans produce lots of information. (Just think about that closet you have that's full of old LPs, tax records, 8mm home movies, and the like.) Computers and the Web have just accelerated the trend. According to research from the University of California, Berkeley, (www.sims.berkeley.edu/research/projects/how-much-info/internet.html) the world now produces about 2 exabytes (1 exabyte = 1 billion gigabytes) of information each year. How much is that? Well, all the words ever spoken by human beings would be only the equivalent of about 1 exabyte. We need more closet space....